Mr. Ricky Smith
AM General Corporation
13200 McKinley Highway
Mishawaka, Indiana 46545

Re: 141-15219
Significant Permit Modification to
Part 70 141-6023-00031

Dear Mr. Smith:

AM General Corporation was issued a permit on February 25, 1999 for a military and commercial HUMMER production plant. A letter requesting a change in the permit was received on November 27, 2001. Pursuant to 326 IAC 2-7-12(d), the change qualifies as a significant permit modification since it is a relaxation of an existing condition, and new applicable requirements will result. Therefore permit is hereby modified as follows (changes are bolded and deletions are struck-through for emphasis):

Request 1: No changes will occur at the HUMMER I plant, therefore it is requested that the description in item (3) on Page 6 of 43 and Section D.5(a) on page 35a of 43 of the Part 70 permit be deleted.

Response 1: Item (3) on Page 6 of 43 and Section D.5(a) on page 35a of 43 of the Part 70 permit will be deleted in the permit as follows (changes are bolded and deletions are struck-through for emphasis):

(3) Construction of the new HUMMER II Plant, which consists of the following:

~~(a) Changes to the existing HUMMER I plant:~~

~~(1) Relocation of the current sanding, masking, painting and final trim operation from the Armour Building to the existing main plant;~~

~~(2) Exterior painting of the existing HUMMER I vehicle to be performed either in the existing plant or in the proposed new paint shop;~~

Subsequent emission units will be re-numbered accordingly.

Request 2: No Deadener Spray Booth (Category #6) will be installed, therefore any page in the permit that reference to this emission unit should be deleted.

Response 2: Item (d) on Page 6a of 43, and Page 35b of 43 will be deleted as follows:

~~(d) Deadener Spray Booth (Category #6) - After the topcoat a deadener material will be sprayed to the wheel wells to reduce the amount of noise passengers hear while in the vehicle. The deadener material will be air dried. The PM overspray from this system will be controlled by a wet scrubber or dry filters.~~

Subsequent emission units will be re-numbered accordingly.

Conditions D.5.9, now D.5.8; D.5.20, now D.5.18 and D.5.24, now D.5.22 will be amended as follows:

D.5.~~9~~ **8** Particulate Matter (PM) [326 IAC 6-3-2(c)]

The PM overspray emissions from the Primer Surfacer/Guidecoat System, ~~Deadener~~, Topcoat System, Spot and Final Repair operations shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and P = process weight rate in tons per hour

or

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 55.0\ P^{0.11} - 40$ where E = rate of emission in pounds per hour; P = process weight rate in tons per hour

D.5.~~20~~ **18**Particulate Overspray

(a) The wet scrubbers, or dry filters shall be in operation or in place at all times when the Primer Surfacer/Guidecoat System, Topcoat System, and ~~Deadener Spray System~~ are in operation.

(b) The dry filters shall be in place at all times the Final and Spot Repair System are in operation.

D.5.~~24~~ **22**Monitoring

(a) Daily inspections shall be performed to verify that the liquid levels and flow rates of the wet scrubbers meet the manufacturer's recommended level. To monitor the performance of the wet scrubbers, the scrubbant level of the wet scrubbers shall be maintained weekly at a level where surface agitation indicates impact of the air flow. To monitor the performance of the baffles, weekly inspections of the baffle panels shall be conducted to verify placement and configuration meet recommendations of the manufacturer. In addition, weekly observations shall be made of the overspray from the surface coating booths (Primer Surfacer/Guidecoat, Topcoat, ~~Deadener~~, and Final and Spot Repair) exhaust stacks while one or more of the booths are in operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

Request 3: Condition D.5(e) referring to the Bulk Storage tanks should be re-numbered to D.5.(b)(5). Also, the source is planning to install smaller storage tanks than what were permitted. Diesel fluid tanks and engine oil tanks will not be constructed. Please change to the following:

(5) Bulk Storage Tanks (Category #12) - Submerged fill pipes, and conservation vents on these tanks to further minimize VOC and HAPs emissions. Stage I vapor controls will also be installed where appropriate.

Tank ID No.	Storage Capacity (gallons)	Location	Material Stored
101	10,000	New Bulk Tank Farm	Purge Solvent
102	10,000	New Bulk Tank Farm	Unleaded Gasoline
103	8,000	New Bulk Tank Farm	Antifreeze (Ethylene Glycol)
104	3,000	New Bulk Tank Farm	Window Washer Fluid
105	3,000	New Bulk Tank Farm	Transmission Fluid
106	3,000	New Bulk Tank Farm	Power Steering Fluid
107	10,000	New Bulk Tank Farm	Waste Solvent

Response 3: The Part 70 permit as it is, now reflects the correct number (D.5(b)(5), therefore no re-numbering will be made on this section. The proposed changes in the sizes of the storage tanks will be incorporated as fallows:

(5) Bulk Storage Tanks (Category #12) - Submerged fill pipes, and conservation vents on these tanks to further minimize VOC and HAPs emissions. Stage I vapor controls will also be installed where appropriate.

Tank ID No.	Storage Capacity (gallons)	Location	Material Stored
101	~~12,000~~ **10,000**	New Bulk Tank Farm	**Purge Solvent** ~~Unleaded Gasoline~~
10 2	~~12,000~~ **10,000**	New Bulk Tank Farm	**Unleaded Gasoline** ~~Antifreeze~~
10 3	~~12,000~~ **8,000**	New Bulk Tank Farm	**Antifreeze (Ethylenene Glycol)** ~~Transmission Fluid~~
10 4	~~12,000~~ **3,000**	New Bulk Tank Farm	**Window Washer Fluid** ~~Diesel Fluid~~
10 5	~~12,000~~ **3,000**	New Bulk Tank Farm	**Transmission Fluid** ~~Purge Thinner~~
10 6	~~12,000~~ **3,000**	New Bulk Tank Farm	**Power Steering Fluid** ~~Windshield Washer~~
10 7	~~12,000~~ **10,000**	New Bulk Tank Farm	**Waste Solvent** ~~Power Steering Fluid~~
~~8~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Waste Paint/Thinner~~
~~9~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Engine Oil~~

Request 4: As the largest tanks to be installed have a capacity of 10,000 gallons (37.85 cubic meters), the provisions of 40 CFR § 60.110b, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) do not apply.

The subpart is only applicable to storage vessels of capacity equal to or greater than forty cubic meters. The source requests that Condition D.5.10 be deleted.

Response 4: Condition D.5.10 New Source Performance Standards (NSPS) [326 IAC 12 and CFR § 60.110b, Subpart Kb] will be deleted, since it is no longer applicable as the source will not install storage vessels with capacities equal to or greater than forty cubic meters (10,567 gallons).

~~D.5.10 New Source Performance Standards (NSPS) [326 IAC 12 and 40 CFR § 60.110b, Subpart Kb]~~

~~Pursuant to 326 IAC 12 and 40 CFR § 60.110b, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels), the following storage tanks are subject to this NSPS:~~

~~Tank ID No.~~	~~Storage Capacity (gallons)~~	~~Location~~	~~Material Stored~~
~~1~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Unleaded Gasoline~~
~~2~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Antifreeze~~
~~3~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Transmission Fluid~~
~~4~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Diesel Fluid~~
~~5~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Purge Thinner~~
~~6~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Windshield Washer~~
~~7~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Power Steering Fluid~~
~~8~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Waste Paint/Thinner~~
~~9~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Engine Oil~~

~~(a) Pursuant to Section (b) of this NSPS the owner or operator of these storage vessels shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.~~

~~(b) Pursuant to Section (a) of this NSPS the owner or operator of these storage vessels shall keep copies of the records required in Section (b) for the life of the source.~~

Request 5: Please change the "Responsible Official" from Adare Fritz to Richard Gehring.

Response 5: Section A.1, "Responsible Official" was changed from Adare Fritz to Richard Gehring as follows:

A.1 General Information [326 IAC 2-7-4(c) [326 IAC 2-7-5(15)]

The Permittee owns and operate a stationary plant for the production of HUMMERs for military and commercial use.

Responsible Official:	~~Adare Fritz~~ **Mr. Ricky Smith- Vice President**
Source Address:	13200 McKinley Hwy., Mishawaka, IN 46545
Mailing Address:	13200 McKinley Hwy., Mishawaka, IN 46545
SIC Code:	3711
County Location:	St. Joseph
County Status	Attainment for all criteria Pollutants
Source Status:	Major Source, under PSD and Emission Offset Rules Major Source, Part 70 Permit Program Major Source, Section 112 of the Clean Air Act

Request 6: The source's has accepted a limit in VOC input usage of 15 pounds per day to avoid the applicability of 326 IAC 8-2-9 on the Final and Spot Repair Booth (Condition D.5.7(c). The source is planning to operate three shifts per day and will no longer be able to meet its VOC input limit. Therefore, the source requests that the Final and Spot Repair Booth be subject to 326 IAC 8-2-9 and will comply with the VOC limits in the rule using carbon adsorption unit to control the VOC emissions.

Response 6: Section (c) of Condition D.5.7 now D.5.6 will be deleted as follows:

D.5.~~7~~ **6** Volatile Organic Compound (VOC) [326 IAC 8-2-9]

(a) Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the volume weighted average volatile organic compound (VOC) content of coating applied to the metal part of the HUMMER II shall be limited as follows:

Type of Coating	VOC Emissions Limit (pounds per gallon of coatings less water
Clear Coatings	4.3
Forced Warm Air Dried Coatings	3.5
Air Dried Coatings	3.5
Extreme Performance Coatings	3.5
All Other Coating	3.0

(b) The VOC limit in this condition shall be determined on a daily-volume- weighted average, using the following equation:

$$\frac{\text{Lb VOC}}{\text{Gallon less water}} = \frac{\sum \text{coatings } [D * O * Q]}{\sum C} \Big/ [1 - w * Dc/Dw]$$

Where:
Dc = density of coating, lb/gal
Dw = density of water, 8.33 lb/gal
O = weight percent organics, %
W = percent volume water, %
Q = quantity of coating, gal/unit
C = total coatings used, gal/unit

~~(c) The VOC input usage from the Spot and Final Repair operation shall be limited to less than 15 pounds per day (lbs/day). Compliance with this limit shall make 326 IAC 8-2-9 (Miscellaneous Metal Coating) not applicable. This limit shall be based on daily-volume-weighted average.~~

(~~d~~ **c**) Solvent sprayed from application equipment during cleanup or color changes shall be directed into appropriately designed reclaim equipment. Such equipment shall be designed to effectively capture purge solvent and minimize evaporation. The waste solvent shall be disposed of in such a manner that evaporation is minimized.
The following condition will be added, since the Final and Spot Repair will now be subject to the requirements of 326 IAC 8-2-9.

D.5.~~8~~ **7** Volatile Organic Compounds [326 IAC 8-1-2(a)

(1) Pursuant to 326 IAC 8-1-2(a), the Topcoat System and the Primer Surfacer/Guidecoat System VOC emission limitations specified under 326 IAC 8-2-9, shall be achieved through one (1) or any combination of the following:

(a) Thermal or catalytic incineration;

(b) Equivalent emissions limitations based on actual transfer efficiency higher than specified baseline transfer efficiency as follows:

Miscellaneous Metal Coating	Equivalent Emission Limit	
	kg/liter Solids Deposited	Lbs/gal Solids Deposited
Clear Coatings	2.08	17.3
Air Dried up to 90^0C	1.34	11.2
Extreme Performance Coatings	1.34	11.2
All Other Coatings and Coating Systems	1.01	8.4

Compliance with the equivalent emissions limits in this condition shall be determined according to the following equation:

$$E = \frac{L}{[(1-(L/D)) * (T)]}$$

Where: E = Equivalent emission limit in pounds of VOC per gallon coating solid deposited.
L = Actual VOC content in coating in pounds per gallon of coating, as applied.
D = Actual density of VOC in coating in pounds per gallon of VOC.
T = Actual measured transfer efficiency.

(2) Pursuant to 326 IAC 8-2-9, the volatile organic compounds (VOC) content of the coatings applied at the Final and Spot Repair Booth shall be limited as follows:

Type of Coating	**VOC Emissions Limit (pounds per gallon of coatings less water**
Clear Coatings	**4.3**
Extreme Performance Coatings	**3.5**

Pursuant to 326 IAC 8-1-2(a), the Final and Spot Repair (Category # 8) shall achieve compliance with the above limits using a Carbon Adsorption System for Final Repair. The operation of the Carbon Adsorption System shall also be considered the PSD BACT for Final Repair operation.

The Carbon Adsorber requires stack testing to verify compliance with condition D.5.8(2), now D.5.7(2) and to establish its operating parameters. Condition D.5.16, now D.5.14 Testing Requirements be revised as follows:

D.5.~~16~~ **14** Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

(a) Compliance stack tests shall be performed on the Regenerative Thermal Oxidizer (RTO) to determine the operating temperature that will achieve the following destruction efficiency and to determine the capture system efficiency for each coating system:

Facility	Destruction Efficiency
ELPO/E-Coat	95%
Primer Surfacer/Guidecoat System	95%
Topcoat System	95%

(b) The Compliance stack tests for the Primer Surfacer/Guidecoat System and Topcoat System in (a) of this condition shall be made utilizing Method 25 for destruction efficiency, and or other methods as approved by the Commissioner for capture efficiency. This test shall be repeated at least once every two and a half (2.5) years from the date of this valid compliance demonstration. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.

(c) Compliance stack tests for the two (2) Final Repair Carbon Adsorbers shall be made utilizing Method 25 to determine the maximum VOC concentration in the exhaust vent stream from the carbon adsorbers that will achieve a minimum removal efficiency of 85% required to comply with the limits in 326 IAC 8-2-9 and or other methods as approved by the Commissioner for capture efficiency. This test shall be repeated at least once every two and a half (2.5) years from the date of this valid compliance demonstration. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.

(d) The compliance stack tests shall be performed on the Primer Surfacer/Guidecoat, and Topcoat, ~~Deadener~~ operations for PM and PM-10 utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for PM and Methods 201 or 201A and 202 (40 CFR 51, Appendix M) for PM-10, or other methods as approved by the Commissioner. The PM and PM10 testing is required to demonstrate that the source is not major for either pollutant, under 326 IAC 2-2, Prevention of Significant Deterioration. This test shall be repeated at least once every two and half (2.5) years from the date of this valid compliance demonstration. PM-10 includes filterable and condensible PM-10. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.

Condition D.5.18, now D.5.16 will be revised to include the requirements on Permanent or Temporary Total Enclosure for “Final Spot Repair” since it has a 100% capture.

D.5.~~18~~**16** Permanent or Temporary Total Enclosure

(a) The capture system for the ELPO/E-Coat System and the **Final Spot Repair** shall meet

the following criteria for a Permanent or Temporary Total Enclosure:

(1) Any Natural Draft Opening (NDO) shall be at least four (4) equivalent opening diameters from each VOC emitting point.

(2) Any exhaust point from the enclosure shall be at least four (4) equivalent duct or hood diameters from each NDO.

(3) The total area of all NDO's shall not exceed five (5) percent of the surface area of the enclosure's four (4) walls, floor, and ceiling.

(4) The average facial velocity (FV) of air through all NDO's shall be at least 3,600 meter per hour (200 fpm). The direction of air through all NDO's shall be into the enclosure.

(5) All access doors and windows whose areas are not included in Section (c) and are not included in the calculations in Section (d) shall be closed during routine operation of the process.

or

(b) Verify 100% capture through other methods as approved by the Commissioner.

The carbon adsorber requirement will be added in Condition D.5.19, now D.5.17 as follows:

D.5.~~19~~**17** Volatile Organic compounds

(a) The Regenerative Thermal Oxidizer (RTO) shall be in operation at all times when the ELPO/E-Coat System and the automatic zones for the Primer Surface/Guidecoat System, and Topcoat System are in operation.

(b) The RTO shall be calibrated, operated and maintained in accordance with the manufacturer's specifications.

(c) When either Final Repair Station is in operation its respective Carbon Adsorber shall be in operation at all times.

Condition D.5.16, now D.5.14 will be modified since a Validation Letter is not necessary for a source with an issued part 70 permit. Since the testing requirement is for new emission units the timing for the testing will also be changed as follows:

D.5.14(~~d~~ **e** The compliance tests required in (a), (b) and (c) of this condition shall be made within 60 after achieving maximum production rate **but but no later than 180 days after initial start up.** ~~but no later than 365 days after receipt of the Validation Letter from the IDEM, OAM.~~

The following condition will be added in the permit and be numbered D.5.23, now D.5.21.

D**.5.21** Operating Parameters

(a) The Regenerative Thermal Oxidizer shall maintain a minimum operating temperature of 1350 ^{0}F or a minimum operating temperature determined in the most recent stack tests to maintain at least 95% destruction efficiency, that is necessary to achieve compliance with condition D.5.6(c) and D.5.8. The operating temperature of the exhaust of the RTO shall be continuously recorded whenever it is operating.

(b) The Permittee shall maintain a maximum VOC concentration in the exhaust vent stream from the carbon adsorbers determined in the most recent stack tests to maintain at least 85% VOC removal, that is necessary to achieve compliance with the VOC limits in 326 IAC 8-2-9. This VOC concentration shall be measured and recorded once per shift at each Final Repair Station. The source shall be considered to be out of compliance if the outlet VOC concentration averaged over any continuous 24-hour period is greater than the maximum value established during the most recent compliance demonstration; **and**

(c) All carbon in each control device shall be replaced with fresh carbon quarterly, or more frequently depending upon the VOC concentration readings in item (b) of this condition.

Condition D.5.25, now D.5.23 Record Keeping Requirements will be amended to incorporate the record keeping requirements for the carbon adsorber.

D.5.2~~5~~**23** Record Keeping Requirements

(a) To document compliance with Conditions D.5.6, now D.5.5; D.5.7, now D.5.6; ~~and~~ D.5.8, now D.5.7 **and D.5.23, now D.5.21** the Permittee shall maintain records in accordance with (1) through (~~9~~ **12**) below. Records maintained for (1) through (~~9~~ **12**) shall be sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Conditions D.5.6, now D.5.5; D.5.7, now D.5.6; ~~and~~ D.5.8, now D.5.7 **and D.5.23, now D.5.21.**

(1) The amount and VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;

(2) A log of the dates of use;

(3) The volume weighted VOC content of the coatings used for each day;

(4) ~~The volume weighted VOC content of the coatings used each day for the Final and Spot Repair~~; **The Carbon Adsorbers outlet VOC concentration readings per shift**;

(5) **The date/time each carbon bed is cleaned or replaced;**

(6) The cleanup solvent usage for each month;

(7) The total VOC usage for each month;

(8) The weight of VOCs emitted for each compliance period;

(9) A statement that the rate of the liquid level and flow at the wet scrubber was maintained according to vendor recommended specification;

(10) Continuous recorder operating temperature readings from the RTO.

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

IDEM, OAQ has deleted condition D.5.5 in the permit since the submission of an Affidavit is not applicable for sources with issued Part 70 permit. Subsequent conditions will be re-numbered accordingly.

~~D.5.5 Significant Source Modification [326 IAC 2-7-10.5(h)]~~

~~This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) when, prior to start of operation, the following requirements are met:~~

~~(a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application. The emissions units covered in the Significant Source Modification approval may begin operating on the date the affidavit of construction is postmarked or hand delivered to IDEM if constructed as proposed.~~

~~(b) If actual construction of the emissions units differs significantly from the construction proposed in the application, the source may not begin operation until the source modification has been revised pursuant to 326 IAC 2-7-11 or 326 IAC 2-7-12 and an Operation Permit Validation Letter is issued.~~

~~(c) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.~~

~~(d) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.~~

The following Report Form will be deleted in the Part 70 permit since the Final and Spot Repair operations are no longer limited to their VOC usage:

~~INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT~~
~~Office of Air Quality~~
~~COMPLIANCE DATA SECTION~~

~~Quarterly Report~~

~~Source Name:~~ ~~AM General Corporation~~
~~Source Address:~~ ~~13200 McKinley Highway, Mishawaka, Indiana 46545~~
~~Mailing Address:~~ ~~13200 McKinley Highway, Mishawaka, Indiana 46545~~
~~PSD/Significant Major Modification: 141-11673-00031~~
~~Facility:~~ ~~Vehicle (HUMMER II) production~~
~~Parameter:~~ ~~VOC~~
~~Limits:~~ ~~The VOC input usage from the Spot and Final Repair operation shall be limited to **less than 15 pounds per day** (lbs/day). This limit shall be based on daily-volume- weighted average.~~

~~**Month** **Year**~~

~~Day~~	~~VOC Input Usage (lb/day)~~	~~Day~~	~~VOC Input Usage (lb/day)~~
~~1~~		~~17~~	
~~2~~		~~18~~	
~~3~~		~~19~~	
~~4~~		~~20~~	
~~5~~		~~21~~	
~~6~~		~~22~~	
~~7~~		~~23~~	
~~8~~		~~24~~	
~~9~~		~~25~~	
~~10~~		~~26~~	
~~11~~		~~27~~	
~~12~~		~~28~~	
~~13~~		~~29~~	
~~14~~		~~30~~	
~~15~~		~~31~~	
~~16~~			

~~Submitted by: _____ Signature: _____~~

~~Title/Position: _____ Date: : _____~~

All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this modification and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Aida De Guzman, at (800) 451-6027, press 0 and ask for Aida De Guzman or extension (3-4972), or dial (317) 233- 4972.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments
APD
cc: File - St. Joseph County
U.S. EPA, Region V
St. Joseph County Health Department
Northern Regional Office
Air Compliance Section Inspector - Rick Reynolds
Compliance Data Section - Karen Nowak
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michele Boner

PART 70 OPERATING PERMIT
OFFICE OF AIR QUALITY
and ST. JOSEPH LOCAL AGENCY

AM General Corporation
13200 McKinley Highway
Mishawaka, Indiana 46545

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 and 326 IAC 2-1-3.2 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments) 40 CFR Part 70.6, IC 13-15 and IC 13-17..

Operation Permit No.: T141-6023-00031	
Issued by: Janet G. McCabe, Assistant Commissioner Office of Air Management	Issuance Date: February 25, 1999

1st Administrative Amendment 141-12041, issued on April 20, 2000
2nd Administrative Amendment 141-12212, issued on August 22, 2000
3rd Administrative Amendment 141-12413, issued on August 4, 2000
4th Administrative amendment 141-14597, issued on July 31, 2001

1st Significant Permit Modification 141-15219	Pages Affected: 6, 6a, 6b, 35a, 35b, 35c, 35d, 35e, 35f, 35g, 35h, 35i, 35j, 35k, 35l, 35m
Issued by:Original signed by Paul Dubenetzky Paul Dubenetzky, Chief Permit Branch Office of Air Quality	Issuance Date: May 8, 2002

SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a stationary plant for the production of HUMMERs for military and commercial use.

Responsible Official:	Ricky Smith - Vice President
Source Address:	13200 McKinley Hwy., Mishawaka, IN 46545
Mailing Address:	13200 McKinley Hwy., Mishawaka, IN 46545
SIC Code:	3711
County Location:	St. Joseph
County Status:	Attainment for all criteria pollutants
Source Status:	Minor Source, under PSD and Emission Offset Rules Major Source, Part 70 Permit Program Major Source, Section 112 of the Clean Air Act

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

(1) Surface coating booths of the following types:

(a) One (1) spraying and dipping operation, constructed in 1983, identified as 001, for the prime coating of small metal parts, with PM overspray from the spraying controlled by water wash, and exhausting at stacks S1 and S2.

(b) One (1) spraying and dipping operation, constructed in 1983, identified as 002, for the topcoating of small metal parts, with a maximum capacity of 12.5 units per hour, with PM overspray from the spraying controlled by water wash, and exhausting at stacks S3 and S4.

(c) One (1) spray coating operation, constructed in 1983, identified as 003, for the prime coating of 1.25 ton metal truck bodies, with a maximum capacity of 12.5 units per hour, with PM overspray controlled by water wash, and exhausting to stacks S5, S6, S7 and S8.

(d) One (1) spray coating operation, constructed in 1983, identified as 004, for the topcoating of metal truck bodies, with a maximum capacity of 12.5 units per hour, with PM overspray controlled by water wash, and exhausting to stacks S9, S10, S11 and S12.

(e) One (1) spray coating operation, constructed in 1983, identified as 005, for the topcoating of metal truck chassis, with a maximum capacity of 12.5 units per hour, with PM overspray controlled by water wash, and exhausting to stacks S13, and S14.

(f) One (1) spray coating operation, constructed in 1983, identified as 006, for the camouflage painting of metal truck bodies, with a maximum capacity of 12.5 units per hour, with PM overspray controlled by water wash, and exhausting to stacks S15, S16, S17 and S18.

(g) One (1) dual touch-up/repair small parts spray coating operation, constructed in 1983, identified as 007, for the coating of small metal truck components, with PM overspray controlled by dry filters, and exhausting to stack S19.

(h) One (1) spray coating operation, constructed in 1991, identified as 008, for the prime coating and topcoating of metal commercial truck bodies, with a maximum capacity of 2 units per hour, with PM overspray controlled by dry filters, and exhausting to stacks S21, S22, S23, S24, S25, S26 and S27.

(i) One (1) spray coating operation, constructed in 1993, identified as 009, for accent and trim painting of metal commercial truck bodies, with a maximum capacity of 2 units per hour, with PM overspray controlled by dry filters, and exhausting to stacks S28 and S29.

(2) Two (2) 25.2 MMBtu per hour natural gas-fired boilers, constructed in 1983, identified as 010 and 011, with no controls and exhausting to stacks S30 and S31, respectively.

(3) Construction of the new HUMMER II Plant, which consists of the following:

(a) New HUMMER II Vehicle production plant:

(1) Two (2) natural-gas-fired low NOx boilers (Categories #1 & #2), identified as boiler #1 and boiler #2, each has a heat input capacity of 25 million British Thermal Units per hour (mmBtu/hr);

(2) Miscellaneous natural gas-fired low NOx process ovens and various heaters, with a total heat input of 109 mmBtu/hr, and low NOx Thermal Oxidizer with a total heat input of 9.7 mmBtu/hr;

(3) Body Shop - This is where the first major step of the assembly process will be performed, metal body components of the HUMMER II vehicle (i.e. door, deck lid, hood, roof, and side panels and frame) will be supplied by off-site contractors. Various types of welding, resistance spot welding, metal grinding/brazing will be performed;

(4) Painting Operations for the HUMMER I and HUMMER II:

(a) Electrodeposition dip prime process (ELPO) (Category #3) - Pre-clean wash, using a mixture of water and water reducible detergents and Phosphate application. These cleaners are applied to the vehicle surface using a combination of spray nozzles and/or dip tanks, to remove oils and grease that may have accumulated on the vehicle parts.

The prime coating system (ELPO), which follows the phosphate cleaning will utilized waterborne coatings made up of a mixture

of resins, pigments and water. The coated vehicle will then enter the ELPO/E-coat drying oven.

The VOC and HAPs emissions from the ELPO will be controlled by a Regenerative Thermal Oxidizer

(b) Primer Surfacer/Guidecoat (Category #4) - Body sealers and/or fillers, prep operation which involves scuff sanding and manual wiping using solvent and tack cloths to remove particles, then to antichip booth, then to primer surfacer booth where the exterior will be painted and primer surfacer drying oven. The coating will be manually applied or will use automatic spray systems.

The VOC and HAPs emissions from the Primer Surfacer/Guidecoat automatic zones and from the curing oven will be controlled by a Regenerative Thermal Oxidizer. The PM overspray will be controlled by a wet scrubber.

(c) Topcoat System (Category #5) - This system will consists of a preparation area, which involves minor scuffing and manual wiping using solvent and tack cloths to remove particles and/or otherwise prepare the surface for painting, basecoat spray booth, clearcoat spray booth, flash-off area and natural gas-fired drying oven, repair/polish. The coating will be applied to the vehicle parts using various types of spray applicators.

The VOC and HAPs emissions from the basecoat/clearcoat automatic spray application zones and from the curing oven of the topcoat system will be controlled by a Regenerative Thermal Oxidizer. The PM overspray will be controlled by a wet scrubber.

(d) Vehicle Fluid Filling (Category #7) - Where gasoline, diesel, antifreeze, transmission fluid, windshield washer fluid, power steering fluid, brake fluid, engine oil, will be filled into the vehicles.

(e) Final and Spot Repair (Category #8) - This includes, off-line spot and final repair. The PM overspray from this system will be controlled by dry filters.

(f) Assembly Final Line (Category #9) - After the paint shop, the painted vehicle components are routed to general assembly. General assembly consists of interior and exterior trim components and glass installation, chassis, wheel/tires, powertrain and final line assembly operations. The Vehicle start-up and roll test verifies if powertrain is installed correctly.

(g) Miscellaneous Solvent Purge Usage and Cleanup (Category #10) - Solvents will be used in the body shop, paint shop, oven cleaning, general assembly areas and routine housekeeping. In the paint shop the purge material is reclaimed internally or externally to the spray application equipment.

(i) Miscellaneous Sealers and Adhesives (Category #11) - Various sealers and adhesives will be used throughput the assembly process. Majority of these sealers and adhesives will be used in the paint shop. A special sealant will be used in the vehicle glass

installation. These materials will be either air-dried or oven cured.

(5) Bulk Storage Tanks (Category #12) - Submerged fill pipes, and conservation vents on these tanks to further minimize VOC and HAPs emissions. Stage I vapor controls will also be installed where appropriate.

Tank ID No.	Storage Capacity (gallons)	Location	Material Stored
101	10,000	New Bulk Tank Farm	Purge Solvent
102	10,000	New Bulk Tank Farm	Unleaded Gasoline
103	8,000	New Bulk Tank Farm	Antifreeze (Ethylene Glycol)
104	3,000	New Bulk Tank Farm	Window Washer Fluid
105	3,000	New Bulk Tank Farm	Transmission Fluid
106	3,000	New Bulk Tank Farm	Power Steering Fluid
107	10,000	New Bulk Tank Farm	Waste Solvent

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21).

(1) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million Btu per hour. (two (2) 1.5 MMBtu per hour boilers)

(2) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6.

(3) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment.

(4) Detail sanding prep for paint.

SECTION D.5 FACILITY OPERATION CONDITIONS

(c) New HUMMER II Vehicle production plant:

(1) Two (2) natural-gas-fired low NOx boilers (Categories #1 & #2), identified as boiler #1 and boiler #2, each has a heat input capacity of 25 million British Thermal Units per hour (mmBtu/hr);

(2) Miscellaneous natural gas-fired low NOx process ovens and various heaters, with a total heat input of 109 mmBtu/hr, and low NOx Thermal Oxidizer with a total heat input of 9.7 mmBtu/hr;

(3) Body Shop - This is where the first major step of the assembly process will be performed, metal body components of the HUMMER II vehicle (i.e. door, deck lid, hood, roof, and side panels and frame) will be supplied by off-site contractors. Various types of welding, resistance spot welding, metal grinding/brazing will be performed;

(4) Painting Operations for the HUMMER I and HUMMER II:

(a) Electrodeposition dip prime process (ELPO) (Category #3) - Pre-clean wash, using a mixture of water and water reducible detergents and Phosphate application. These cleaners are applied to the vehicle surface using a combination of spray nozzles and/or dip tanks, to remove oils and grease that may have accumulated on the vehicle parts.

The prime coating system (ELPO), which follows the phosphate cleaning will utilized waterborne coatings made up of a mixture of resins, pigments and water. The coated vehicle will then enter the ELPO/E-coat drying oven.

The VOC and HAPs emissions from the ELPO will be controlled by a Regenerative Thermal Oxidizer

(b) Primer Surfacer/Guidecoat (Category #4) - Body sealers and/or fillers, prep operation which involves scuff sanding and manual wiping using solvent and tack cloths to remove particles, then to antichip booth, then to primer surfacer booth where the exterior will be painted and primer surfacer drying oven. The coating will be manually applied or will use automatic spray systems.

The VOC and HAPs emissions from the Primer Surfacer/Guidecoat automatic zones and from the curing oven will be controlled by a Regenerative Thermal Oxidizer. The PM overspray will be controlled by a wet scrubber.

(c) Topcoat System (Category #5) - This system will consists of a preparation area, which involves minor scuffing and manual wiping using solvent and tack cloths to remove particles and/or otherwise prepare the surface for painting, basecoat spray booth, clearcoat spray booth, flash-off area and natural gas-fired drying oven, repair/polish. The coating will be applied to the vehicle parts using various types of spray applicators.

The VOC and HAPs emissions from the basecoat/clearcoat automatic spray application zones and from the curing oven of the topcoat system will be controlled by a Regenerative Thermal Oxidizer. The PM overspray will be controlled by a wet scrubber.

(d) Vehicle Fluid Filling (Category #7) - Where gasoline, diesel, antifreeze, transmission fluid, windshield washer fluid, power steering fluid, brake fluid, engine oil, will be filled into the vehicles.

(e) Final and Spot Repair (Category #8) - This includes, off-line spot and final repair. The PM overspray from this system will be controlled by dry filters.

(f) Assembly Final Line (Category #9) - After the paint shop, the painted vehicle components are routed to general assembly. General assembly consists of interior and exterior trim components and glass installation, chassis, wheel/tires, powertrain and final line assembly operations. The Vehicle start-up and roll test verifies if powertrain is installed correctly.

(g) Miscellaneous Solvent Purge Usage and Cleanup (Category #10) - Solvents will be used in the body shop, paint shop, oven cleaning, general assembly areas and routine housekeeping. In the paint shop the purge material is reclaimed internally or externally to the spray application equipment.

(i) Miscellaneous Sealers and Adhesives (Category #11) - Various sealers and adhesives will be used throughput the assembly process. Majority of these sealers and adhesives will be used in the paint shop. A special sealant will be used in the vehicle glass installation. These materials will be either air-dried or oven cured.

(5) Bulk Storage Tanks (Category #12) - Submerged fill pipes, and conservation vents on these tanks to further minimize VOC and HAPs emissions. Stage I vapor controls will also be installed where appropriate.

Tank ID No.	Storage Capacity (gallons)	Location	Material Stored
101	10,000	New Bulk Tank Farm	Purge Solvent
102	10,000	New Bulk Tank Farm	Unleaded Gasoline
103	8,000	New Bulk Tank Farm	Antifreeze (Ethylene Glycol)
104	3,000	New Bulk Tank Farm	Window Washer Fluid
105	3,000	New Bulk Tank Farm	Transmission Fluid
106	3,000	New Bulk Tank Farm	Power Steering Fluid
107	10,000	New Bulk Tank Farm	Waste Solvent

	AIR POLLUTION CONTROL SUMMARY	
CATEGORY	OPERATION	CONTROL EQUIPMENT/TECHNOLOGY
1	Miscellaneous natural gas-fired process ovens, heaters and control equipment (RTO)	Low NOx Burners
2	Two Boilers	Low NOx Burners
3	- Electrodeposition dip prime, E-Coat process (ELPO) - E-Coat Oven	Regenerative Thermal Oxidizer (RTO)
4	- Primer Surfacer/Guidecoat Spray System - Primer Surfacer/Guidecoat Drying Oven	Regenerative Thermal Oxidizer for VOC and HAP control (paint automatic applicator sections only). Wet Scrubber for PM overspray.
5	- Topcoat Spray System - Topcoat Drying Oven	Regenerative Thermal Oxidizer (paint automatic applicator sections only). Wet Scrubber for PM overspray.
12	Bulk Storage Tanks	Submerged fill pipes, conservation vents, and Stage I vapor controls.

SECTION D.5 GENERAL CONSTRUCTION CONDITIONS

D.5.1 Permit No Defense [IC 13]

This approval to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

D.5.2 Definitions [326 IAC 2-7-1]

Terms in this approval shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2 and 326 IAC 2-7 shall prevail.

D.5.3 Effective Date of the Permit [40CFR 124]

Pursuant to 40 CFR 124.15, 40 CFR 124.19, and 40 CFR 124.20, this permit is effective upon issuance.

D.5.4 Expiration of Permits [326 IAC 2-2-8]

Pursuant to 326 IAC 2-2-8(a)(1), this permit to construct shall expire if construction is not commenced within eighteen (18) months after receipt of this approval, or if construction is suspended for a continuous period of eighteen (18) months or more.

OPERATION CONDITIONS

Emission Limitations and Standards

D.5.5 PSD BACT Limit [326 IAC 2-2] [40 CFR 52.21]

Pursuant to the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR Part 52.21, the HUMMER II plant shall be limited as follows:

(a) The HUMMER II plant production rate shall be limited to 86,000 vehicles per 12-consecutive month period, rolled on a monthly basis. Daily maximum production shall not exceed 364 vehicles.

During the first twelve (12) months of operation, the vehicle shall be limited such that the total vehicle produced divided by the accumulated months of operation shall not exceed 86,000 vehicles per year divided by twelve (12) months, which equals an average of 7,166 vehicles per month, rolled on a monthly basis.

(b) The volatile organic material (VOC) usages, and natural gas usages from the HUMMER II plant shall be limited such that the summation of the VOC emissions from all facilities at this plant shall not exceed 260 tons per 12-month period, rolled on a monthly basis.

During the first twelve (12) months of operation, the volatile organic material (VOC) usages, and natural gas usages shall be limited such that the summation of the VOC emissions from all facilities at this HUMMER II plant divided by the accumulated months of operation shall not exceed 260 tons per year divided by twelve (12) months, which equals an average of 21.7 tons per month, rolled on a monthly basis.

(c) The limitations for the following HUMMER II surface coating facilities shall be as follows:

Facilities/Operations	VOC Limit (Pounds of VOC/Gallon Applied Coating Solids)
ELPO / E-Coat System	0.04
Primer Surfacer/Guidecoat System	2.9
Topcoat System	5.3

The VOC limit in pounds of VOC/gallon applied coating solids shall be determined on a daily-volume-weighted average and actual transfer efficiencies.

(d) Good Work Practices To Reduce VOC Emissions:

(1) Conservation vents, submerged fill pipes and Stage I Vapor Recovery System where appropriate shall be installed for the gasoline storage tanks.

(2) High efficiency spray applicators shall be utilized for all the surface coating facilities.

(3) Capturing of paint lines solvent for recycling.

(4) Capturing of solvent purged from paint lines for off-site recycling and/or other processing.

(5) The use of masking material to protect certain equipment, walls, and floors around the booths from overspray, thus reducing the cleaning solvent usage.

(6) The use of water-based coatings when feasible.

(7) Water blasting of vehicle carriers.

(8) The use of closed containers to store or dispose of cloth, paper, or other materials impregnated with VOC.

(9) The use of Stage 2 Recovery System in the fluid filling operation.

(10) Minimizing spills in the vehicle fluid filling operation, and

(11) Closing the receiving vessel after it has been filled with the fluid.

(e) Compliance with sections (a) through (d) of this PSD BACT condition and condition D.6.3 of this permit shall satisfy 326 IAC 2-2, the Prevention of Significant Deterioration and also satisfy 326 IAC 2-4.1-1 (New Source Toxic Control) and 326 IAC 8-1-6 (General VOC Reduction Requirements).

D.5.6 Volatile Organic Compound (VOC) [326 IAC 8-2-9]

(a) Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the volume weighted average volatile organic compound (VOC) content of coating applied to the metal part of the HUMMER II shall be limited as follows:

Type of Coating	VOC Emissions Limit (pounds per gallon of coatings less water
Clear Coatings	4.3
Forced Warm Air Dried Coatings	3.5
Air Dried Coatings	3.5
Extreme Performance Coatings	3.5
All Other Coating	3.0

(b) The VOC limit in this condition shall be determined on a daily-volume- weighted average, using the following equation:

$$\frac{\text{Lb VOC}}{\text{Gallon less water}} = \frac{\sum \text{coatings } [D * O * Q] / [1 - w * Dc/Dw]}{\sum C}$$

Where:
Dc = density of coating, lb/gal
Dw = density of water, 8.33 lb/gal
O = weight percent organics, %
W = percent volume water, %
Q = quantity of coating, gal/unit
C = total coatings used, gal/unit

(c) Solvent sprayed from application equipment during cleanup or color changes shall be directed into appropriately designed reclaim equipment. Such equipment shall be designed to effectively capture purge solvent and minimize evaporation. The waste solvent shall be disposed of in such a manner that evaporation is minimized.

D.5.7 Volatile Organic Compounds [326 IAC 8-1-2(a)

(1) Pursuant to 326 IAC 8-1-2(a), the Topcoat System and the Primer Surfacer/Guidecoat System VOC emission limitations specified under 326 IAC 8-2-9, shall be achieved through one (1) or any combination of the following:

(a) Thermal or catalytic incineration;

(b) Equivalent emissions limitations based on actual transfer efficiency higher than specified baseline transfer efficiency as follows:

Miscellaneous Metal Coating	Equivalent Emission Limit	
	kg/liter Solids Deposited	Lbs/gal Solids Deposited
Clear Coatings	2.08	17.3
Air Dried up to 90^0C	1.34	11.2

Extreme Performance Coatings	1.34	11.2
All Other Coatings and Coating Systems	1.01	8.4

Compliance with the equivalent emissions limits in this condition shall be determined according to the following equation:

$$E = \frac{L}{[(1-(L/D)) * (T)]}$$

Where: E = Equivalent emission limit in pounds of VOC per gallon coating solid deposited.
L = Actual VOC content in coating in pounds per gallon of coating, as applied.
D = Actual density of VOC in coating in pounds per gallon of VOC.
T = Actual measured transfer efficiency.

(2) Pursuant to 326 IAC 8-2-9, the volatile organic compounds (VOC) content of the coatings applied at the Final and Spot Repair Booth shall be limited as follows:

Type of Coating	VOC Emissions Limit (pounds per gallon of coatings less water
Clear Coatings	4.3
Extreme Performance Coatings	3.5

Pursuant to 326 IAC 8-1-2(a), the Final and Spot Repair (Category # 8) shall achieve compliance with the above limits using a Carbon Adsorption System for Final Repair. The operation of the Carbon Adsorption System shall also be considered the PSD BACT for Final Repair operation.

D.5.8 Particulate Matter (PM) [326 IAC 6-3-2(c)]

The PM overspray emissions from the Primer Surfacer/Guidecoat System, Topcoat System, Spot and Final Repair operations shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and P = process weight rate in tons per hour

or

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 55.0\ P^{0.11} - 40$ where E = rate of emission in pounds per hour; and P = process weight rate in tons per hour

D.5.9 New Source Performance Standards [326 IAC 12 and 40 CFR § 60.40c, Subpart Dc]

Pursuant to 326 IAC 12 and 40 CFR § 60.40c, Subpart Dc- Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, the proposed two (2) 25 mmBtu/hr

boilers #1 and #2 are subject to the § 60.48 Subsections (a), (g) and (i) of this NSPS.

(a) Pursuant to Subsection (a) of § 60.48, the owner/operator of the two (2) boilers shall submit notification of the date of construction, or reconstruction, anticipated startup and actual startup as provided by § 60.7 of this part. The notification shall include:

(1) The design heat input capacity of the two (2) boilers and identification of the fuel to be combusted; and

(2) The annual capacity factor at which the owner/operator anticipates operating the two (2) boilers, based on all fuels fired and based on individual fuel fired.

(b) Pursuant to Subsection (g) § 60.48, the owner/operator of the two (2) boilers shall maintain records of the amounts of fuel combusted during each month.

(c) Pursuant Subsection (i) § 60.48, all records required in this Section shall be maintained by the owner or operator of the two (2) boilers for a period of two (2) years following the date of such record.

D.5.10 Particulate Emissions Limitation for Sources of Indirect Heating [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4, the Particulate Matter (PM) emissions from the two (2) 25 million British Thermal Units (mmBtu) boilers shall:

(a) Be limited as follows:

Facility	PM Emissions Limit (lb/mmBtu)
Boiler #1	0.33
Boiler #2	0.33

The PM emissions limits shall be determined using the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where: Pt = Pounds of particulate matter emitted per million Btu (lb/mmBtu) heat input.
Q = Total source maximum operating capacity rating in million Btu per hour (mmBtu/hr) heat input.

(b) Be equipped with Low NOx burners; and

(c) Combust only natural gas.

D.5.11 Gasoline Dispensing Facilities [326 IAC 8-4-6]

(a) Pursuant to 326 IAC 8-4-6(b) - No owner or operator shall allow the transfer of gasoline between any transport and any storage tank unless such tank is equipped with the following:

(1) A submerge fill pipe.
(2) Either a pressure relief valve set to release at no less than seven-tenths (0.7) pounds per square inch or an orifice of five-tenths (0.5) inch in diameter.
(3) A vapor balance system connected between the tank and the transport, operating according to manufacturer's specifications.

(b) It shall be the responsibility of the owner or operator of the transport to make certain that the vapor balance system is connected between the transport and the storage tank and is operating according to the manufacturer's specifications.

(c) The storage tank will dispense gasoline to fuel the manufactured vehicles for testing. AM General Corporation is proposing to install submerged fill pipes and pressure relief valves on the gasoline storage tank and will employ a vapor balancing system for gasoline tank truck unloading activities, to comply with 326 IAC 8-4-6.

D.5.12 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

D.5.13 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and its control device.

Compliance Determination Requirements

D.5.14 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

(a) Compliance stack tests shall be performed on the Regenerative Thermal Oxidizer (RTO) to determine the operating temperature that will achieve the following destruction efficiency and to determine the capture system efficiency for each coating system:

Facility	Destruction Efficiency
ELPO/E-Coat	95%
Primer Surfacer/Guidecoat System	95%
Topcoat System	95%

(b) The Compliance stack tests for the Primer Surfacer/Guidecoat System and Topcoat System in (a) of this condition shall be made utilizing Method 25 for destruction efficiency, and or other methods as approved by the Commissioner for capture efficiency. This test shall be repeated at least once every two and a half (2.5) years from the date of this valid compliance demonstration. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.

(c) Compliance stack tests for the two (2) Final Repair Carbon Adsorbers shall be made utilizing Method 25 to determine the maximum VOC concentration in the exhaust vent stream from the carbon adsorbers that will achieve a minimum removal efficiency of 85% required to comply with the limits in 326 IAC 8-2-9 and or other methods as approved by the Commissioner for capture efficiency. This test shall be repeated at least once every two and a half (2.5) years from the date of this valid compliance demonstration. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.

(d) The compliance stack tests shall perform on the Primer Surfacer/Guidecoat, and Topcoat, operations for PM and PM-10 utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for PM and Methods 201 or 201A and 202 (40 CFR 51, Appendix M) for PM-10, or

other methods as approved by the Commissioner. The PM and PM10 testing is required to demonstrate that the source is not major for either pollutant, under 326 IAC 2-2, Prevention of Significant Deterioration. This test shall be repeated at least once every two and half (2.5) years from the date of this valid compliance demonstration. PM-10 includes filterable and condensible PM-10. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.

(e) The compliance tests required in (a), (b) and (c) of this condition shall be made within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up.

D.5.15 Volatile Organic Compounds (VOC)

Compliance with the VOC content and usage limitations contained in Conditions D.5.5 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) using formulation data supplied by the coating manufacturer. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.5.16 Permanent or Temporary Total Enclosure

(a) The capture system for the ELPO/E-Coat System and the Final Spot Repair shall meet the following criteria for a Permanent or Temporary Total Enclosure:

(1) Any Natural Draft Opening (NDO) shall be at least four (4) equivalent opening diameters from each VOC emitting point.

(2) Any exhaust point from the enclosure shall be at least four (4) equivalent duct or hood diameters from each NDO.

(3) The total area of all NDO's shall not exceed five (5) percent of the surface area of the enclosure's four (4) walls, floor, and ceiling.

(4) The average facial velocity (FV) of air through all NDO's shall be at least 3,600 meter per hour (200 fpm). The direction of air through all NDO's shall be into the enclosure.

(5) All access doors and windows whose areas are not included in Section (c) and are not included in the calculations in Section (d) shall be closed during routine operation of the process.

or

(b) Verify 100% capture through other methods as approved by the Commissioner.

D.5.17 Volatile Organic compounds

(a) The Regenerative Thermal Oxidizer (RTO) shall be in operation at all times when the ELPO/E-Coat System and the automatic zones for the Primer Surface/Guidecoat System, and Topcoat System are in operation.

(b) The RTO shall be calibrated, operated and maintained in accordance with the manufacturer's specifications.

(c) When either Final Repair Station is in operation its respective Carbon Adsorber shall be in operation at all times.

D.5.18 Particulate Overspray

(a) The wet scrubbers, or dry filters shall be in operation or in place at all times when the Primer Surfacer/Guidecoat System, and Topcoat System are in operation.

(b) The dry filters shall be in place at all times the Final and Spot Repair System are in operation.

D.5.19 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

D.5.20 Performance Testing [326 IAC 3-6]

(a) All testing required in D.5.14 shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

(b) All test reports must be received by IDEM, OAQ within forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Compliance Monitoring Requirements

D.5.21 Operating Parameters

(a) The Regenerative Thermal Oxidizer shall maintain a minimum operating temperature of 1350^0F or a minimum operating temperature determined in the most recent stack tests to maintain at least 95% destruction efficiency, that is necessary to achieve compliance with condition D.5.5(c) and D.5.7. The operating temperature of the exhaust of the RTO shall be continuously recorded whenever it is operating.

(b) The Permittee shall maintain a maximum VOC concentration in the exhaust vent stream from the carbon adsorbers determined in the most recent stack tests to maintain at least 85% VOC removal, that is necessary to achieve compliance with the VOC limits in 326 IAC 8-2-9. This VOC concentration shall be measured and recorded once per shift at each Final Repair Station. The source shall be considered to be out of compliance if the outlet VOC concentration averaged over any continuous 24-hour period is greater than the maximum value established during the most recent compliance demonstration; and

(c) All carbon in each control device shall be replaced with fresh carbon quarterly, or more frequently depending upon the VOC concentration readings in item (b) of this condition.

D.5.22 Monitoring

(a) Daily inspections shall be performed to verify that the liquid levels and flow rates of the wet scrubbers meet the manufacturer's recommended level. To monitor the performance of the wet scrubbers, the scrubbant level of the wet scrubbers shall be maintained weekly at a level where surface agitation indicates impact of the air flow. To monitor the performance of the baffles, weekly inspections of the baffle panels shall be conducted to verify placement and configuration meet recommendations of the manufacturer. In addition, weekly observations shall be made of the overspray from the surface coating booths (Primer Surfacer/Guidecoat, Topcoat and Final and Spot Repair) exhaust stacks while one or more of the booths are in operation. The Compliance

Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

(b) Monthly inspections shall be performed of the coating emissions from the stack to determine the presence of paint overspray on the rooftops and the nearby ground. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when a noticeable change or excessive accumulation in overspray emission, or evidence of overspray emission is observed. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

(c) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Record Keeping and Reporting Requirements

D.5.23 Record Keeping Requirements

(a) To document compliance with Conditions D.5.5, D.5.6, D.5.7, and D.5.21 the Permittee shall maintain records in accordance with (1) through (10) below. Records maintained for (1) through (10) shall be sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Conditions D.5.5, D.5.6, D.5.7, and D.5.21.

(1) The amount and VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;

(2) A log of the dates of use;

(3) The volume weighted VOC content of the coatings used for each day;

(4) The Carbon Adsorbers outlet VOC concentration readings per shift;

(5) The date/time each carbon bed is cleaned or replaced;

(6) The cleanup solvent usage for each month;

(7) The total VOC usage for each month;

(8) The weight of VOCs emitted for each compliance period;

(9) A statement that the rate of the liquid level and flow at the wet scrubber was maintained according to vendor recommended specification;

(10) Continuous recorder operating temperature readings from the RTO.

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.5.24 Reporting Requirements

(a) A quarterly summary of the information to document compliance with Condition D.5.5 shall be submitted, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. These

reports shall be submitted to the following address:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

(b) Pursuant to 326 IAC 12 (New Source Performance Standards (NSPS)) 40 CFR Part 60.40c, Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units), AM General Corporation shall report the following for boiler #1, and boiler #2:

(1) Commencement of construction date (no later than 30 days after such date);

(2) Anticipated start-up date (not more than 60 days or less than 30 days prior to such date);

(3) Actual start-up date (within 15 days after such date); and

(4) Date of performance testing (at least 30 days prior to such date), when required by a condition elsewhere in this permit.

Indiana Department of Environmental Management
Office of Air Quality
and St. Joseph Local Agency

Technical Support Document (TSD) for a Significant Part 70 Permit Modification

Source Background and Description

Source Name:	**AM General Corporation**
Source Location:	**13200 McKinley Highway, Mishawaka, IN**
County:	**St. Joseph**
SIC Code:	**3711**
Operation Permit No.:	**T 141-6023-00031**
Operation Permit Issuance Date:	**February 25, 1999**
Permit Modification:	**141-15219**
Permit Reviewer:	**Aida De Guzman**

The Office of Air Quality (OAQ) has reviewed a modification application from AM General Corporation relating to the relaxation of VOC usage limit on the Final and Spot Repair operations and instead will comply with the applicable requirements using Carbon Adsorbers.

History

On November 2 7, 2001, AM General Corporation submitted an application to the OAQ requesting Part 70 permit change. The source has been issued a Part 70 permit, T 141-6023-00031 on February 25, 1999.

Existing Approvals

The source was issued a Part 70 Operating Permit (141-6023-00031) on February 25, 1999. The source has since received the following:

(a) First Minor Source Modification No.: 141-10954, issued on August 16, 1999;

(b) First PSD/Significant Source Modification No.: 14111673, issued on June 28, 2000;

(c) First Administrative Amendment No.: 141-12041, issued on April 20, 2000;

(d) Second Administrative Amendment No.: 141-12212, issued on August 22, 2000;

(e) Third Administrative Amendment No.: 141-12413, issued on August 4, 2000; and

(f) Fourth Administrative Amendment No.: 141-14597, issued on July 31, 2001.

Recommendation

The staff recommends to the Commissioner that the Significant Permit Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received onNovember 27, 2001, with additional information received on November 29, 2001, and information received via e-mail on January 10, 14, 25 and 31, 2002.

Emission Calculations

(a) Final and Spot Repair Operations: See Page 1 of 1 TSD Appendix A for detailed VOC volume weighted average calculations. No emission increase will result from this change.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

Pollutant	Potential To Emit (tons/year)
PM	-
PM-10	-
SO_2	-
VOC	-
CO	-
NO_x	-

Note: For the purpose of determining Title V applicability for particulates, PM-10, not PM, is the regulated pollutant in consideration.

Justification of Level of Permit

The Final and Spot Repair Operations were permitted and limited to 15 pounds per day in PSD/Significant Source Modification No.: 141-11673, issued on June 20, 2000. These operations were limited to their VOC usage to avoid the applicability of 326 IAC 8-2-9 (Miscellaneous Metal Coating). The source requested that this limit be relaxed and instead the source will comply with 326 IAC 8-2-9 using Carbon Adsorbers. Therefore, this change will constitute relaxation of existing applicable requirements under 326 IAC 2-7-12(d), and new applicable requirements will result. No increase in emissions will result.

County Attainment Status

The source is located in St. Joseph County.

Pollutant	Status
PM-10	attainment
SO_2	attainment
NO_2	attainment
Ozone	attainment
CO	attainment
Lead	not determined

(a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. St. Joseph County has been designated as attainment or unclassifiable for ozone.

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to the Final and Repair Booth, as determined in PSD/Significant Source Modification 141-11673.

(b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) applicable to the Final and Repair Booth, as determined in PSD/Significant Source Modification 141-11673.

State Rule Applicability - Entire Source

Rules determined in PSD/Significant Source Modification 141-11673 will stay the same.

State Rule Applicability - Individual Facilities

(a) 326 IAC 8-2-9 (Miscellaneous Metal Coating)
The Final and Spot Repair Operations were permitted and limited to 15 pounds per day in PSD/Significant Source Modification No.: 141-11673, issued on June 20, 2000. These operations were limited to their VOC usage to avoid the applicability of 326 IAC 8-2-9 (Miscellaneous Metal Coating). The source requested that this limit be relaxed and instead will comply with 326 IAC 8-2-9 using Carbon Adsorbers. The Final Repair operation will be controlled by Carbon Adsorbers, and the Spot Repair will remain uncontrolled. These operations are in compliance with the limit of 3.5 pounds per gallon less water for extreme performance coatings and 4.3 pounds per gallon less water for clear coatings. See Page 1 of 1 TSD Appendix A for detailed calculations on the VOC volume weighted average from both Final and Spot Repair operations.

Solvent sprayed from application equipment during cleanup or color changes shall be directed into containers. Such containers shall be closed as soon as such solvent spraying is complete, and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

(b) Other rules determined in PSD/Significant Source Modification 141-11673 will stay the same.

Changes to the Part 70 Permit

Request 1: No changes will occur at the HUMMER I plant, therefore it is requested that the description in item (3) on Page 6 of 43 and Section D.5(a) on page 35a of 43 of the Part 70 permit be deleted.

Response 1: Item (3) on Page 6 of 43 and Section D.5(a) on page 35a of 43 of the Part 70 permit will be deleted in the permit as follows (changes are bolded and deletions are struck-through for emphasis):

(3) Construction of the new HUMMER II Plant, which consists of the following:
~~(a) Changes to the existing HUMMER I plant:~~

~~(1) Relocation of the current sanding, masking, painting and final trim operation from the Armour Building to the existing main plant;~~

~~(2) Exterior painting of the existing HUMMER I vehicle to be performed either in the existing plant or in the proposed new paint shop;~~

Subsequent emission units will be re-numbered accordingly.

Request 2: No Deadener Spray Booth (Category #6) will be installed, therefore any page in the permit that reference to this emission unit should be deleted.

Response 2: Item (d) on Page 6a of 43, and Page 35b of 43 will be deleted as follows:

~~(d) Deadener Spray Booth (Category #6) - After the topcoat a deadener material will be sprayed to the wheel wells to reduce the amount of noise passengers hear while in the vehicle. The deadener material will be air dried. The PM overspray from this system will be controlled by a wet scrubber or dry filters.~~

Subsequent emission units will be re-numbered accordingly.

Conditions D.5.9, now D.5.8; D.5.20, now D.5.18 and D.5.24, now D.5.22 will be amended as follows:

D.5.~~9~~ **8** Particulate Matter (PM) [326 IAC 6-3-2(c)]

The PM overspray emissions from the Primer Surfacer/Guidecoat System, ~~Deadener~~, Topcoat System, Spot and Final Repair operations shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and P = process weight rate in tons per hour

or

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 55.0\ P^{0.11} - 40$ where E = rate of emission in pounds per hour; P = process weight rate in tons per hour

D.5.~~20~~ **18**Particulate Overspray

(a) The wet scrubbers, or dry filters shall be in operation or in place at all times when the Primer Surfacer/Guidecoat System, Topcoat System, and ~~Deadener Spray System~~ are in operation.

(b) The dry filters shall be in place at all times the Final and Spot Repair System are in operation.

D.5.~~24~~ **22**Monitoring

(a) Daily inspections shall be performed to verify that the liquid levels and flow rates of the wet scrubbers meet the manufacturer's recommended level. To monitor the performance of the wet scrubbers, the scrubbant level of the wet scrubbers shall be maintained weekly at a level where surface agitation indicates impact of the air flow. To monitor the performance of the baffles, weekly inspections of the baffle panels shall be conducted to verify placement and configuration meet recommendations of the manufacturer. In addition, weekly observations shall be made of the overspray from the surface coating booths (Primer Surfacer/Guidecoat, Topcoat, ~~Deadener~~, and Final and Spot Repair) exhaust stacks while one or more of the booths are in operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

Request 3: Condition D.5(e) referring to the Bulk Storage tanks should be re-numbered to D.5.(b)(5). Also, the source is planning to install smaller storage tanks than what were permitted. Diesel fluid tanks and engine oil tanks will not be constructed. Please change to the following:

(5) Bulk Storage Tanks (Category #12) - Submerged fill pipes, and conservation vents on these tanks to further minimize VOC and HAPs emissions. Stage I vapor controls will also be installed where appropriate.

Tank ID No.	Storage Capacity (gallons)	Location	Material Stored
101	10,000	New Bulk Tank Farm	Purge Solvent
102	10,000	New Bulk Tank Farm	Unleaded Gasoline
103	8,000	New Bulk Tank Farm	Antifreeze (Ethylene Glycol)
104	3,000	New Bulk Tank Farm	Window Washer Fluid
105	3,000	New Bulk Tank Farm	Transmission Fluid
106	3,000	New Bulk Tank Farm	Power Steering Fluid
107	10,000	New Bulk Tank Farm	Waste Solvent

Response 3: The Part 70 permit as it is, now reflects the correct number (D.5(b)(5), therefore no re-numbering will be made on this section. The proposed changes in the sizes of the storage tanks will be incorporated as fallows:

(5) Bulk Storage Tanks (Category #12) - Submerged fill pipes, and conservation vents on these tanks to further minimize VOC and HAPs emissions. Stage I vapor controls will also be installed where appropriate.

Tank ID No.	Storage Capacity (gallons)	Location	Material Stored
101	~~12,000~~ **10,000**	New Bulk Tank Farm	**Purge Solvent** ~~Unleaded Gasoline~~
10 2	~~12,000~~ **10,000**	New Bulk Tank Farm	**Unleaded Gasoline** ~~Antifreeze~~
10 3	~~12,000~~ **8,000**	New Bulk Tank Farm	**Antifreeze (Ethylenene Glycol)** ~~Transmission Fluid~~
10 4	~~12,000~~ **3,000**	New Bulk Tank Farm	**Window Washer Fluid** ~~Diesel Fluid~~
10 5	~~12,000~~ **3,000**	New Bulk Tank Farm	**Transmission Fluid** ~~Purge Thinner~~
10 6	~~12,000~~ **3,000**	New Bulk Tank Farm	**Power Steering Fluid** ~~Windshield Washer~~
10 7	~~12,000~~ **10,000**	New Bulk Tank Farm	**Waste Solvent** ~~Power Steering Fluid~~
~~8~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Waste Paint/Thinner~~
~~9~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Engine Oil~~

Request 4: As the largest tanks to be installed have a capacity of 10,000 gallons (37.85 cubic meters), the provisions of 40 CFR § 60.110b, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) do not apply.

The subpart is only applicable to storage vessels of capacity equal to or greater than forty cubic meters. The source requests that Condition D.5.10 be deleted.

Response 4: Condition D.5.10 New Source Performance Standards (NSPS) [326 IAC 12 and CFR § 60.110b, Subpart Kb] will be deleted, since it is no longer applicable as the source will not install storage vessels with capacities equal to or greater than forty cubic meters (10,567 gallons).

~~D.5.10 New Source Performance Standards (NSPS) [326 IAC 12 and 40 CFR § 60.110b, Subpart Kb]~~

~~Pursuant to 326 IAC 12 and 40 CFR § 60.110b, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels), the following storage tanks are subject to this NSPS:~~

~~Tank ID No.~~	~~Storage Capacity (gallons)~~	~~Location~~	~~Material Stored~~
~~1~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Unleaded Gasoline~~
~~2~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Antifreeze~~
~~3~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Transmission Fluid~~
~~4~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Diesel Fluid~~
~~5~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Purge Thinner~~
~~6~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Windshield Washer~~
~~7~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Power Steering Fluid~~
~~8~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Waste Paint/Thinner~~
~~9~~	~~12,000~~	~~New Bulk Tank Farm~~	~~Engine Oil~~

~~(a) Pursuant to Section (b) of this NSPS the owner or operator of these storage vessels shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.~~

~~(b) Pursuant to Section (a) of this NSPS the owner or operator of these storage vessels shall keep copies of the records required in Section (b) for the life of the source.~~

Request 5: Please change the "Responsible Official" from Adare Fritz to Richard Gehring.

Response 5: Section A.1, "Responsible Official" was changed from Adare Fritz to Richard Gehring as follows:

A.1 General Information [326 IAC 2-7-4(c) [326 IAC 2-7-5(15)]

The Permittee owns and operate a stationary plant for the production of HUMMERs for military and commercial use.

Responsible Official:	~~Adare Fritz~~ **Richard Gehring - Manager Environmental, Safety & Health**
Source Address:	13200 McKinley Hwy., Mishawaka, IN 46545
Mailing Address:	13200 McKinley Hwy., Mishawaka, IN 46545
SIC Code:	3711
County Location:	St. Joseph
County Status	Attainment for all criteria Pollutants
Source Status:	Major Source, under PSD and Emission Offset Rules Major Source, Part 70 Permit Program Major Source, Section 112 of the Clean Air Act

Request 6: The source's has accepted a limit in VOC input usage of 15 pounds per day to avoid the applicability of 326 IAC 8-2-9 on the Final and Spot Repair Booth (Condition D.5.7(c). The source is planning to operate three shifts per day and will no longer be able to meet its VOC input limit. Therefore, the source requests that the Final and Spot Repair Booth be subject to 326 IAC 8-2-9 and will comply with the VOC limits in the rule using carbon adsorption unit to control the VOC emissions.

Response 6: Section (c) of Condition D.5.7 now D.5.6 will be deleted as follows:

D.5.~~7~~ **6** Volatile Organic Compound (VOC) [326 IAC 8-2-9]

(a) Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the volume weighted average volatile organic compound (VOC) content of coating applied to the metal part of the HUMMER II shall be limited as follows:

Type of Coating	VOC Emissions Limit (pounds per gallon of coatings less water
Clear Coatings	4.3
Forced Warm Air Dried Coatings	3.5
Air Dried Coatings	3.5
Extreme Performance Coatings	3.5
All Other Coating	3.0

(b) The VOC limit in this condition shall be determined on a daily-volume- weighted average, using the following equation:

$$\frac{\text{Lb VOC}}{\text{Gallon less water}} = \frac{\sum \text{coatings } [D * O * Q] / [1 - w * Dc/Dw]}{\sum C}$$

Where:
Dc = density of coating, lb/gal
Dw = density of water, 8.33 lb/gal
O = weight percent organics, %
W = percent volume water, %
Q = quantity of coating, gal/unit
C = total coatings used, gal/unit

~~(c) The VOC input usage from the Spot and Final Repair operation shall be limited to less than 15 pounds per day (lbs/day). Compliance with this limit shall make 326 IAC 8-2-9 (Miscellaneous Metal Coating) not applicable. This limit shall be based on daily-volume-weighted average.~~

(~~d~~ **c**) Solvent sprayed from application equipment during cleanup or color changes shall be directed into appropriately designed reclaim equipment. Such equipment shall be designed to effectively capture purge solvent and minimize evaporation. The waste solvent shall be disposed of in such a manner that evaporation is minimized.
The following condition will be added, since the Final and Spot Repair will now be subject to the requirements of 326 IAC 8-2-9.

D.5.~~8~~ **7** Volatile Organic Compounds [326 IAC 8-1-2(a)

(1) Pursuant to 326 IAC 8-1-2(a), the Topcoat System and the Primer Surfacer/Guidecoat System VOC emission limitations specified under 326 IAC 8-2-9, shall be achieved through one (1) or any combination of the following:

(a) Thermal or catalytic incineration;

(b) Equivalent emissions limitations based on actual transfer efficiency higher than specified baseline transfer efficiency as follows:

Miscellaneous Metal Coating	Equivalent Emission Limit	
	kg/liter Solids Deposited	Lbs/gal Solids Deposited
Clear Coatings	2.08	17.3
Air Dried up to 90^0C	1.34	11.2

Extreme Performance Coatings	1.34	11.2
All Other Coatings and Coating Systems	1.01	8.4

Compliance with the equivalent emissions limits in this condition shall be determined according to the following equation:

$$E = \frac{L}{[(1-(L/D)) * (T)]}$$

Where: E = Equivalent emission limit in pounds of VOC per gallon coating solid deposited.
L = Actual VOC content in coating in pounds per gallon of coating, as applied.
D = Actual density of VOC in coating in pounds per gallon of VOC.
T = Actual measured transfer efficiency.

(2) Pursuant to 326 IAC 8-2-9, the volatile organic compounds (VOC) content of the coatings applied at the Final and Spot Repair Booth shall be limited as follows:

Type of Coating	**VOC Emissions Limit (pounds per gallon of coatings less water**
Clear Coatings	**4.3**
Extreme Performance Coatings	**3.5**

Pursuant to 326 IAC 8-1-2(a), the Final and Spot Repair (Category # 8) shall achieve compliance with the above limits using a Carbon Adsorption System for Final Repair.

The Carbon Adsorber requires stack testing to verify compliance with condition D.5.8(2), now D.5.7(2) and to establish its operating parameters. Condition D.5.16, now D.5.14 Testing Requirements be revised as follows:

D.5.~~16~~ **14** Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

(a) Compliance stack tests shall be performed on the Regenerative Thermal Oxidizer (RTO) to determine the operating temperature that will achieve the following destruction efficiency and to determine the capture system efficiency for each coating system:

Facility	Destruction Efficiency
ELPO/E-Coat	95%
Primer Surfacer/Guidecoat System	95%
Topcoat System	95%

(b) The Compliance stack tests for the Primer Surfacer/Guidecoat System and Topcoat System in (a) of this condition shall be made utilizing Method 25 for destruction efficiency, and or other methods as approved by the Commissioner for capture efficiency. This test shall be repeated at least once every two and a half (2.5) years from

the date of this valid compliance demonstration. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.

(c) Compliance stack tests for the two (2) Final Repair Carbon Adsorbers shall be made utilizing Method 25 to determine the maximum VOC concentration in the exhaust vent stream from the carbon adsorbers that will achieve a minimum removal efficiency of 85% required to comply with the limits in 326 IAC 8-2-9 and or other methods as approved by the Commissioner for capture efficiency. This test shall be repeated at least once every two and a half (2.5) years from the date of this valid compliance demonstration. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.

(d) The compliance stack tests shall be performed on the Primer Surfacer/Guidecoat, and Topcoat, ~~Deadener~~ operations for PM and PM-10 utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for PM and Methods 201 or 201A and 202 (40 CFR 51, Appendix M) for PM-10, or other methods as approved by the Commissioner. The PM and PM10 testing is required to demonstrate that the source is not major for either pollutant, under 326 IAC 2-2, Prevention of Significant Deterioration. This test shall be repeated at least once every two and half (2.5) years from the date of this valid compliance demonstration. PM-10 includes filterable and condensible PM-10. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facility is in compliance.

Condition D.5.18, now D.5.16 will be revised to include the requirements on Permanent or Temporary Total Enclosure for "Final Spot Repair" since it has a 100% capture.

D.5.~~18~~**16** Permanent or Temporary Total Enclosure

(a) The capture system for the ELPO/E-Coat System and the **Final Spot Repair** shall meet the following criteria for a Permanent or Temporary Total Enclosure:

(1) Any Natural Draft Opening (NDO) shall be at least four (4) equivalent opening diameters from each VOC emitting point.

(2) Any exhaust point from the enclosure shall be at least four (4) equivalent duct or hood diameters from each NDO.

(3) The total area of all NDO's shall not exceed five (5) percent of the surface area of the enclosure's four (4) walls, floor, and ceiling.

(4) The average facial velocity (FV) of air through all NDO's shall be at least 3,600 meter per hour (200 fpm). The direction of air through all NDO's shall be into the enclosure.

(5) All access doors and windows whose areas are not included in Section (c) and are not included in the calculations in Section (d) shall be closed during routine operation of the process.

or

(b) Verify 100% capture through other methods as approved by the Commissioner.

The carbon adsorber requirement will be added in Condition D.5.19, now D.5.17 as follows:

D.5.~~19~~**17** Volatile Organic compounds

(a) The Regenerative Thermal Oxidizer (RTO) shall be in operation at all times when the ELPO/E-Coat System and the automatic zones for the Primer Surface/Guidecoat System, and Topcoat System are in operation.

(b) The RTO shall be calibrated, operated and maintained in accordance with the manufacturer's specifications.

(c) When either Final Repair Station is in operation its respective Carbon Adsorber shall be in operation at all times.

Condition D.5.16, now D.5.14 will be modified since a Validation Letter is not necessary for a source with an issued part 70 permit. Since the testing requirement is for new emission units the timing for the testing will also be changed as follows:

D.5.14(~~d~~ **e**) The compliance tests required in (a), (b) and (c) of this condition shall be made within 60 after achieving maximum production rate **but but no later than 180 days after initial start up.** ~~but no later than 365 days after receipt of the Validation Letter from the IDEM, OAM.~~

The following condition will be added in the permit and be numbered D.5.23, now D.5.21.

D**.5.21** Operating Parameters

(a) The Regenerative Thermal Oxidizer shall maintain a minimum operating temperature of 1350 ^{0}F or a minimum operating temperature determined in the most recent stack tests to maintain at least 95% destruction efficiency, that is necessary to achieve compliance with condition D.5.6(c) and D.5.8. The operating temperature of the exhaust of the RTO shall be continuously recorded whenever it is operating.

(b) The Permittee shall maintain a maximum VOC concentration in the exhaust vent stream from the carbon adsorbers determined in the most recent stack tests to maintain at least 85% VOC removal, that is necessary to achieve compliance with the VOC limits in 326 IAC 8-2-9. This VOC concentration shall be measured and recorded once per shift at each Final Repair Station. The source shall be considered to be out of compliance if the outlet VOC concentration averaged over any continuous 24-hour period is greater than the maximum value established during the most recent compliance demonstration; **and**

(c) All carbon in each control device shall be replaced with fresh carbon quarterly, or more frequently depending upon the VOC concentration readings in item (b) of this condition.

Condition D.5.25, now D.5.23 Record Keeping Requirements will be amended to incorporate the record keeping requirements for the carbon adsorber.

D.5.2~~5~~**23** Record Keeping Requirements

(a) To document compliance with Conditions D.5.6, now D.5.5; D.5.7, now D.5.6; ~~and~~ D.5.8, now D.5.7 **and D.5.23, now D.5.21** the Permittee shall maintain records in accordance with (1) through (~~9~~ **12**) below. Records maintained for (1) through (~~9~~ **12**) shall be sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Conditions D.5.6, now D.5.5; D.5.7, now D.5.6; ~~and~~ D.5.8, now D.5.7 **and D.5.23, now D.5.21.**

(1) The amount and VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;

(2) A log of the dates of use;

(3) The volume weighted VOC content of the coatings used for each day;

(4) ~~The volume weighted VOC content of the coatings used each day for the Final and Spot Repair~~; **The Carbon Adsorbers outlet VOC concentration readings per shift**;

(5) **The date/time each carbon bed is cleaned or replaced;**

(6) The cleanup solvent usage for each month;

(7) The total VOC usage for each month;

(8) The weight of VOCs emitted for each compliance period;

(9) A statement that the rate of the liquid level and flow at the wet scrubber was maintained according to vendor recommended specification;

(10) Continuous recorder operating temperature readings from the RTO.

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

IDEM, OAQ has deleted condition D.5.5 in the permit since the submission of an Affidavit is not applicable for sources with issued Part 70 permit. Subsequent conditions will be re-numbered accordingly.

~~D.5.5 Significant Source Modification [326 IAC 2-7-10.5(h)]~~

~~This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) when, prior to start of operation, the following requirements are met:~~

~~(a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application. The emissions units covered in the Significant Source Modification approval may begin operating on the date the affidavit of construction is postmarked or hand delivered to IDEM if constructed as proposed.~~

~~(b) If actual construction of the emissions units differs significantly from the construction proposed in the application, the source may not begin operation until the source modification has been revised pursuant to 326 IAC 2-7-11 or 326 IAC 2-7-12 and an Operation Permit Validation Letter is issued.~~

~~(c) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.~~

~~(d) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.~~

The following Report Form will be deleted in the Part 70 permit since the Final and Spot Repair operations are no longer limited to their VOC usage:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Office of Air Quality
COMPLIANCE DATA SECTION

Quarterly Report

Source Name: AM General Corporation
Source Address: 13200 McKinley Highway, Mishawaka, Indiana 46545
Mailing Address: 13200 McKinley Highway, Mishawaka, Indiana 46545
Part 70 Permit No.: 141-6023-00031
Facility: Vehicle (HUMMER II) production
Parameter: VOC
Limits: The VOC input usage from the Spot and Final Repair operation shall be limited to **less than 15 pounds per day** (lbs/day). This limit shall be based on daily-volume- weighted average.

Month _____ **Year** _____

Day	VOC Input Usage (lb/day)	Day	VOC Input Usage (lb/day)
1		17	
2		18	
3		19	
4		20	
5		21	
6		22	
7		23	
8		24	
9		25	
10		26	
11		27	
12		28	
13		29	
14		30	
15		31	
16			

Submitted by: _____ Signature: _____

Title/Position: _____ Date: : _____

Conclusion

The operation of this Hummer production plant shall be subject to the conditions of the attached Significant Part 70 Permit Modification No. **141-15219-00031.**

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the
Technical Support Document for a Significant Part 70 Operating Permit Modification

Source Name:	AM General Corporation	
Source Location:	13200 McKinley Highway, Mishawaka, Indiana	
County:	St. Joseph	
SIC Code:	3711	
Permit Modification:	141-15219	
Operation Permit No.:	T141-6023-00031	Issuance Date: February 25, 1999
Permit Reviewer:	Aida De Guzman	

On March 15, 2002 the Office of Air Quality (OAQ) had a notice published in the South Bend Tribune, South Bend, Indiana, stating that AM General Corporation had applied for a Significant Permit Modification relating to the relaxation of VOC usage limit on the Final and Spot Repair operations and instead will comply with the applicable requirements using carbon adsorbers. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On March 26, 2002, AM General Corporation submitted the following comments to the proposed permit. Additions in the permit has a result of these comments are **bolded** and deletions are ~~struck-through~~ for emphasis:

Comment 1: The Responsible Official, Richard Gehring as written in the draft permit modification who replaced Mr. Adare Fritz due to his retirement should be changed to Ricky R. Smith. Mr. Smith is the Vice-President of the AM General Corporation.

Response 1: Section A.1 has been modified as follows:

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a stationary plant for the production of HUMMERs for military and commercial use.

Responsible Official:	~~Richard Gehring~~ **Ricky Smith - Vice President**
Source Address:	13200 McKinley Hwy., Mishawaka, IN 46545
Mailing Address:	13200 McKinley Hwy., Mishawaka, IN 46545
SIC Code:	3711
County Location:	St. Joseph
County Status:	Attainment for all criteria pollutants
Source Status:	Minor Source, under PSD and Emission Offset Rules Major Source, Part 70 Permit Program Major Source, Section 112 of the Clean Air Act

Upon further review IDEM, OAQ has made the following changes to the permit:

The following statement has been added as an explanation relative to the PSD BACT on the Final Repair operation.

State Rule Applicability - Individual Facilities

(a) No change

(b) **No PSD BACT was determined for Final Repair operation in PSD/Significant Source Modification 141-11673, but rather this operation was limited to its VOC usage to avoid the applicability of 326 IAC 8-2-9. The source had proposed to install carbon adsorption system to comply with the rule and requested a relaxation of the VOC limit required for Final Repair. The installation of carbon adsorption system will be considered as the PSD BACT for Final Repair operation.**

(~~b~~ **c**) Other rules determined in PSD/Significant Source Modification 141-11673 will stay the same.

Condition D.5.7 will be revised to incorporate the explanation relative to the PSD BACT on the Final Repair operation as follows:

D.5.7 Volatile Organic Compounds [326 IAC 8-1-2(a)

(1) No change

(2) Pursuant to 326 IAC 8-2-9, the volatile organic compounds (VOC) content of the coatings applied at the Final and Spot Repair Booth shall be limited as follows:

Type of Coating	VOC Emissions Limit (pounds per gallon of coatings less water
Clear Coatings	4.3
Extreme Performance Coatings	3.5

Pursuant to 326 IAC 8-1-2(a), the Final and Spot Repair (Category # 8) shall achieve compliance with the above limits using a Carbon Adsorption System for Final Repair. **The operation of the Carbon Adsorption System shall also be considered the PSD BACT for Final Repair operation**.

Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations

Company Name: AM General Corporation
Address City IN Zip: 13200 McKinley Highway, Mishawaka, IN 46545
Significant Permit Mod 141-15219
Plt ID: 141-00031
Reviewer: Aida De Guzman
Date Application Received: Nov. 27, 2001

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Uncontrolled Pounds VOC per gallon of coating less water	Controlled Pounds of VOC per gallons Less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC Uncontrolled tons per year	Potential VOC Controlled tons per year	Uncontrolled Particulate Potential (ton/yr)	Controlled Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency	Summation Coatings	Overall Control Efficiency
SECTION One : SPOT REPAIR (in the paint shop area), NO VOC CONTROL																					
Basecoat (Sunset Orange Metallic	8.5	57.65%	0.0%	57.7%	0.0%	37.00%	0.30000	0.825	4.90	4.90	4.90	1.21	29.11	5.31	5.31	0.98	0.02	13.24	75%	1.4406735	0.0%
Clearcoat (Ureclear Clearcoat)	8.4	61.00%	0.0%	61.0%	0.0%	52.00%	0.30000	0.825	5.12	5.12	5.12	1.27	**30.44**	**5.55**	**5.55**	**0.89**	**0.02**	9.85	75%	1.52439	0.0%
Clearcoat Activator (Misting Blend for Ureclear)	8.4	78.00%	0.0%	78.0%	0.0%	52.40%	0.30000	0.825	6.55	6.55	6.55	1.62	**38.92**	**7.10**	**7.10**	**0.50**	**0.01**	12.50	75%	1.94922	0.0%
Coatings Weighted Average							*0.90000*		*5.46*	*5.46*										*4.9142835*	
SECTION TWO: FINAL REPAIR (in the General Assembly area), VOC CONTROLLED BY CARBON ADSORBER																					
Basecoat (Sunset Orange Metallic)	8.5	57.65%	0.0%	57.7%	0.0%	37.00%	0.30000	0.825	4.90	0.74	4.90	1.21	29.11	5.31	0.80	0.98	0.02	13.24	75%	1.4406735	85%
Clearcoat (Ureclear Clearcoat)	8.4	61.00%	0.0%	61.0%	0.0%	52.00%	0.30000	0.825	5.12	0.77	5.12	1.27	**30.44**	**5.55**	**0.83**	**0.89**	**0.02**	9.85	75%	1.52439	85%
Clearcoat Activator (Misting Blend for Ureclear)	8.4	78.00%	0.0%	78.0%	0.0%	52.40%	0.30000	0.825	6.55	0.98	6.55	1.62	**38.92**	**7.10**	**1.07**	**0.50**	**0.01**	12.50	75%	1.94922	85%
Coatings Weighted Average							*0.90000*		*5.46*	*0.82*										*4.9142835*	*85%*

Add worst case coating to all solvents

Uncontrolled Emissions		**138.72**	**25.30**		**2.78**	
Controlled Emissions	**3.14 < 3.5 limit in 326 IAC 8-2-9**			**14.55**		**0.06**

METHODOLOGY

Only the Final Repair is controlled by the Carbon Adsorber with 100% capture and 85% VOC removal Efficiency.
Summation Coatings = Sum Coatings (Densitycoat * Wt % Org. * quantity of coatings, gal/unit) / (1-vol % water * Densitycoat/density water)
Volume Weighted Average = Summation Coatings / Total coatings Used
Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used